CHAPTER 7

CONCLUSION AND FUTURE ENHANCEMENT

7.1 CONCLUSION

In our research work, we have analyzed and identified the solutions for major issues in frequency, sink node and positions. Using the multiple access techniques, SDMA, FDMA and OFDMA are analyzed for distribution of data. In every technique, the bandwidth and error rates are identified with less than 0.5% and also the time taken for distributing the data in every node is analyzed with 0.2 seconds for more than 250 nodes. In this scenario, the FDMASS algorithm have implemented for transmitting the time schedule. This algorithm produced the overall weighted average time less than 0.5, but not exactly. Due to the deviation of the frequencies, the error rates are defined high, but constantly maintained high frequencies.

The OFDMA technique is implemented in the same localized environment. This technique produced the higher bandwidth and also not deviating the frequencies. The average time taken for this technique is 0.41 seconds that is overall weighted time is less than 0.5 seconds. The error rates are calculated with Minimum Variance Unbiased Estimator (MVUE) and Maximum Likelihood Estimator (MLE). The earlier work has used with Total Least Square (TLS) Method in SDMA technique. The result of this methods are produced the error rate 0.81seconds and it produced the quality of bandwidth more than 50%. The concepts in the localized environment are
sink nodes and Positions. These two concepts have implemented with IPSO algorithm in localized environment. This algorithm is used to find the appropriate signal position for transferring the data. The sink node is used to identify the indented nodes to communicate in the appropriate position. The sink node produced the authentication for the purpose of securing data.

One of the major applications of WSN in medical application, IPSO has been implemented in medical for positioning the drug in human body. It is used to identify the drug movement, which has to reach the appropriate cancer biopsy position. In the earlier work of the researches were not carried at this type of concept and they used only schemes for identifying the signal positions. The reported research work has been implemented in various applications.

7.2 FUTURE ENHANCEMENT

This work can be extended in the future for improving the better performance of using IPSO in various applications. The routing path mechanism can be improved and producing the optimal path in the localization by using swarm intelligence techniques. The QoS produced in the existing work of average error rate is 0.46 approximately. By using the swarm intelligence technique, the new algorithm with combination of OSPF(Open Shortest Path First) and BGP(Border Gateway Protocol) protocol can be used to find the average error rate will be 0.2 with higher bandwidth in the localization.